WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005SD36B

Title: Evaluating Phosphorus Loss on a Watershed Scale

Project Type: Research

Focus Categories: Groundwater, Water Quality, Solute Transport

Keywords: Phosphorus loss, watershed, eutrophication

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: $17,995

Non-Federal Matching Funds: $25,770

Congressional District: First

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Abstract

Evaluating P loss of South Dakota soils at the watershed scale is important to understanding the P loading potential to surface water resources. The specific objectives of the proposed project are: 1) evaluate the relationship that exists between total P loss from micro-plot field areas and total P loss on a watershed scale, and 2) provide field demonstrations and P loss education to livestock producers, extension educators, water quality experts, state regulators, and various environmental stakeholders. P loss will be evaluated at the micro-plot scale by following the current National Phosphorus Research protocol. P loss at the watershed scale will be monitored by placing autosamplers at the outlets of each of two watershed areas. The continuous record of discharge and water quality samples will be used to calculate loads of suspended sediments and nutrients for each watershed. By assessing the relationship that exists between P loss at the plot scale with P loss at the watershed scale, the proposed project will provide soil scientists and water quality experts data for a greater understanding of the factors governing P loss.

Consequently, better management strategies can be devised that more effectively reduce P loading to surface water resources and cultural eutrophication of lakes statewide.